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Southwestern Forest Insect & Disease Bulletin

SOUTHWESTERN REGION
U.S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE

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TREES IN THE SOUTHWEST INJURED BY COLD WEATHER

During the period of January 3-8, 1971, temperatures in forested areas of the Southwest were extremely low. At least one location--the official weather station at Hawley Lake, Arizona--reported a record low of minus 40° F. Reports of injured trees were received from the following areas:

Arizona

Tusayan Ranger District, Kaibab National Forest (ponderosa and pinyon pine).
Jacob Lake Ranger District, Kaibab National Forest (ponderosa and pinyon pine).
Alpine Ranger District, Apache National Forest (ponderosa pine).

New Mexico

Las Vegas Ranger District, Santa Fe National Forest (ponderosa pine).
Tres Piedras Ranger District, Carson National Forest (pinyon pine).
Sandia Ranger District, Cibola National Forest (pinyon pine).
Grants Ranger District, Cibola National Forest (ponderosa and pinyon pine).

Seedlings and saplings in canyon bottoms and other frost-pocket areas were probably the most seriously affected. Extent of permanent damage can best be determined after the beginning of the growing season. Damaged needles may fall, but if the buds and cambium have not been killed, the injured trees will probably recover.

BUGS AND WEATHER

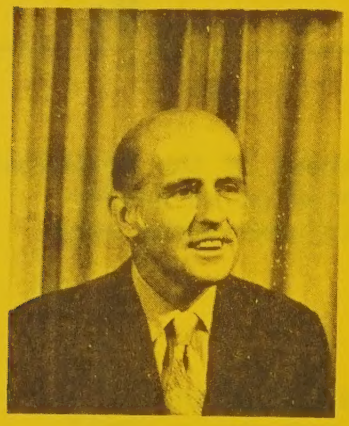
The record low temperatures in early January were fatal to spruce beetle larvae in epidemic infestations on the Fort Apache Indian Reservation and the Santa Fe National Forest. Biological evaluation data show larval population reductions of 90 and 86 percent for these areas, respectively. The epidemic populations have been reduced to non-treatable levels. Integrated silvicultural practices are being recommended for the infestations.

On the Lincoln National Forest, the cold weather had no measurable effect on the epidemic roundheaded pine beetle populations. The temperatures were not low enough in the ponderosa pine zone to cause beetle mortality.

In many areas within the Region, tree vigor has been decreased by the freeze damage. Further tree stress is expected if the drought that we are now experiencing continues. Damage by many usually secondary forest pests, primarily by ips and other secondary bark and twig beetles, can be expected to increase. Our entomologists will follow this situation with great interest.

In summary, our unusual weather has brought both good and bad news to the insect situation in the Region.

PEST CONTROL STAFF



Frank Yasinski is Chief of the Forest Insect and Disease Branch. He is a New York native and graduate of New York State College of Forestry, with a B.S. in Forest Management and M.S. in Forest Entomology. Yaz has worked in the Southwestern Region with the Rocky Mountain Forest and Range Experiment Station and Regional Office since 1955. Previous to this, he worked with the Rocky Mountain Forest and Range Experiment Station in Colorado.

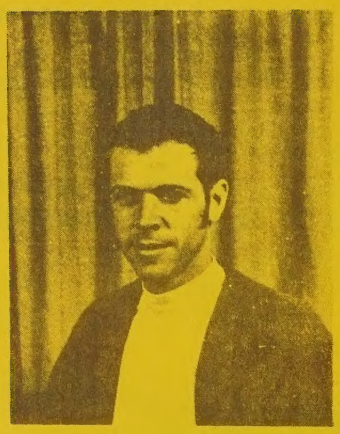
Paul Buffam is an entomologist in charge of the Insect Prevention and Control Section and also handles pesticide use for the Branch. A native Oregonian, he attended Oregon State University, receiving a B.S. in Forest Management and an M.S. in Forest Entomology. Paul has worked for the Forest Service since 1959 as an entomologist with the Pacific Northwest Forest and Range Experiment Station, Pacific Northwest Region, and Pacific Southwest Forest and Range Experiment Station before coming to the Southwestern Region 4 years ago.

Don Lucht is an entomologist who handles cooperative forest pest control activities for the Branch. He is from Illinois. Don received his B.S. in Entomology from Colorado State University in 1955 and M.S. in Forest Entomology from Purdue University in 1961. Don's experience includes 5 years as an entomologist with the State of New Mexico and 1 year with Region 9 in Forest Pest Control. He has worked in Region 3 since 1962.

Mel Weiss is a plant pathologist in charge of the Forest Pathology Section. A native Texan, Mel attended the University of Missouri where he received his B.S. in Forestry and did graduate work in plant pathology. He has worked in the Southwestern Region for the past 5 years.

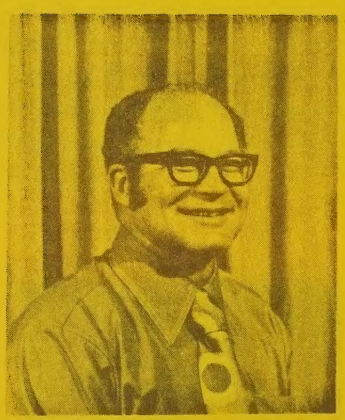
Bob Loomis is a plant pathologist in the Forest Pathology Section where he heads up the Region-wide air pollution effects monitoring network for forest vegetation. Bob is a native of the eastern U.S., where he received a B.S. in Biology from Gettysburg College and an M.F. in Forest Insect and Disease Protection from Duke University. Bob worked 2 years as the Forest Insect and Disease Specialist for the State of Kentucky Department of Natural Resources before coming to Albuquerque last October.

Harold Flake is an entomologist in charge of the Insect Detection and Evaluation Section. He is from Idaho and attended Utah State University, where he received his B.S. and M.S. in Entomology. Harold worked with the Pacific Southwest Forest and Range Experiment Station and Intermountain Region previous to coming to Albuquerque in 1967.



Charles Germain is a biological technician in the Insect Detection and Evaluation Section. Chuck is from New York and was graduated from New York State College of Forestry Ranger's School. Chuck worked for the Rocky Mountain Forest and Range Experiment Station at Ft. Collins, Colorado, for 6 years before transferring to Albuquerque in 1967. Chuck serves as Branch photographer, designer, artist, and guitarist as well as performing his other duties.

Bob Frye is an entomologist in the Insect Detection and Evaluation Section where he heads up spruce beetle evaluations. A native Coloradan, Bob attended Colorado State University where he received a B.S. and M.S. in Entomology. Bob has been on our staff since April 1970.



Lester Putman is the Branch Secretary, in which position he serves as Branch typist, file clerk, librarian, information center, and baseball fan. "Entomo," who is from Maryland, served $16\frac{1}{2}$ years with the Air Force before he came to us in 1965.

PEST CONTROL BRANCH MOVES

We have obtained three offices and a laboratory on the second floor of the old U.S. Courthouse Building at 421 Gold Avenue, SW. Our mailing address is still:

Pest Control Branch
Division of Timber Management
517 Gold Avenue, SW
Albuquerque, New Mexico 87101

New room and telephone assignments are as follows:

	Room	Telephone No.
Frank M. Yasinski	208	843-3319
Paul E. Buffam	210	843-2440
Harold W. Flake, Jr.	210	843-2440
Robert H. Frye	212	843-2440
Charles J. Germain	212	843-2440
Robert C. Loomis	210	843-2440
Donald D. Lucht	206	843-2663
Melvyn J. Weiss	206.	843-2663

Drop by and see our new facilities.

AIR POLLUTION EFFECTS MONITORING

In 1970, the Forest Insect and Disease Branch initiated a continuous survey of forest areas for air pollution injury. These areas will be monitored for possible effects from sulfur dioxide, ozone, PAN, nitrogen oxides, and other pollutants.

Presently, sulfur dioxide monitoring stations are being established in cooperation with local land managers. These stations are measuring either general background levels in areas where no source exists at the present time, or current levels associated with existing sources. Listed below are the areas currently being monitored:

Monitoring Area	Number of Sulfation Plates
Navajo Indian Reservation (Proposed)	3
Mesa Verde National Park	4
Grand Canyon National Park	2
Glen Canyon National Recreation Area (Cooperative with Forest Service, Region 4)	4

Monitoring Area	Number of Sulfation Plates
Aztec Ruins National Monument	1
Santa Fe National Forest (Cuba Ranger District)	4
Kaibab National Forest (Jacob Lake Ranger District)	2
Gila National Forest (Glenwood, Silver City, Mimbres, and Wilderness Ranger Districts)	6
Carson National Forest (Jicarilla Ranger District)	1
Apache National Forest (Clifton Ranger District)(Newly Established)	4

We expect to monitor for sulfur dioxide in each area for at least 1 year, at which time the local sulfation plate network can then be continued or discontinued as each situation dictates.

Results to date indicate low average monthly levels of sulfur dioxide at all stations. As might be expected, stations located on the Gila National Forest, near Silver City, had the highest readings; however, even these readings indicate low average levels. While these low readings are encouraging, high level fumigations of short duration, which can cause plant injury, are not specifically picked up with available equipment. For this reason, and because pollutants other than sulfur dioxide can cause plant injury, it is necessary to inspect area vegetation for possible damage. Regional plant pathologists will periodically examine forest trees and associated plants at or near the monitoring sites and at other selected points. To date, no widespread areas of tree damage have been found; however, "on-the-ground" inspections during late summer and early fall of this year should give a much clearer picture of our present status.

Cooperation by all who assist in changing the sulfation plates each month has been excellent. Because the sulfation plate results are expressed as an average daily figure, it is most important to know how long the plates have been exposed. Please make sure the following information is clearly indicated on the plates when they are sent back to the Regional Office:

1. Location code on plates.

2. Dates on and off clearly written on plate.

UNEXPLAINED NEEDLE SPOTS PREVALENT REGION-WIDE

An unexplained chlorotic mottle and/or fleck has been noted for many years on second and third year ponderosa pine needles. This condition has been found Region-wide, but does not appear to be associated with insects, diseases, or known sources of air pollution. Needle symptoms of this type can be confused with some types of air pollution injury. For this reason, we are working with several research plant pathologists and air pollution specialists in studying the problem.

ARMILLARIA ROOT ROT FOUND IN AN ARIZONA PLANTATION

In February 1971, Armillaria root rot was detected in the Brushy Mountain Plantation, a 500-acre area on the Lakeside Ranger District, Sitgreaves National Forest, Arizona. Diseased trees had typical white mycelial fans underneath the bark of the root collar. Armillaria mellea, the fungus which causes the disease, was cultured in the laboratory from infected root sections. This pest is distributed throughout Arizona and New Mexico in natural stands. However, its potential importance in plantations is unknown. The Brushy Mountain Plantation will be surveyed this year to determine the distribution and number of infected trees.

A. mellea has caused serious losses in the Los Conchas Plantation on the Jemez Ranger District, Santa Fe National Forest, New Mexico. In 1968, 208 apparently healthy trees in the Plantation were tagged for later examination. By 1970, 45 of the trees had been killed by A. mellea.

HYPOXYLON CANKER FOUND IN NEW LOCATION

In February 1971, Hypoxylon canker of aspen was found approximately 6 miles east of Hawley Lake on the Fort Apache Indian Reservation in Arizona. This disease was first observed in Arizona in 1957 on the San Francisco Peaks, Coconino National Forest. It has since been found in other localities in Arizona and in New Mexico. Hypoxylon canker is one of the most serious diseases of aspen in the Lake States, but its impact on aspen stands in this area has not been determined.

DWARF MISTLETOE PREVENTION

The Brushy Mountain Plantation, a 500-acre ponderosa pine plantation on the Sitgreaves National Forest, Arizona, will be protected from dwarf mistletoe by a series of treatments beginning this year. Scattered residual trees will be examined for dwarf mistletoe, and those that are infected will be removed.

In 1970, dwarf mistletoe-infected branches were pruned from approximately 150 ponderosa pine in two campgrounds on the Crown King Ranger District, Prescott National Forest, Arizona. Pruning of infected branches is expected to prolong the life of the trees and reduce spread of dwarf mistletoe in the campgrounds.

SILVISAR 510 REGISTERED FOR BARK BEETLES

We have just received word from The Ansul Company that Silvisar 510 Tree Killer (cacodylic acid) has been registered for bark beetle suppression and prevention in Arizona and New Mexico. This material can be used to eliminate the hazard from bark beetle buildups in logging slash or road or trail building debris or for killing beetle populations in newly infested trees. Registration has been obtained for these uses against the spruce beetle, mountain pine beetle, Douglas-fir beetle, roundheaded pine beetle, Arizona five-spined ips, pine engraver beetle, and the California five-spined ips. Silvisar 510 can also be used as a trap tree technique for spruce beetle prevention and suppression. This herbicide must be applied by professional foresters for these uses.

TENT CATERPILLAR SPRAY STUDY POSTPONED

A proposed pilot control study to determine the effectiveness of the bacterium, Bacillus thuringiensis, against the southwestern tent caterpillar at Sabino Canyon Recreation Area on the Santa Catalina District, Coronado National Forest, has been postponed. A temporary permit for use of the new B.t. formulation Thuricide HPC (High Potency Concentrate) could not be obtained from the Pesticide Regulation Division of the Environmental Protection Agency before the caterpillars had grown to latter stages of development. Thuricide is a stomach poison and must be consumed to be effective. It is usually more effective against small larvae than those in late stages of development.

Heavy defoliation occurred on Goodding willow and Fremont cottonwood throughout Sabino Canyon in March. Individual trees contained from 20-150 tents of this pest. Refoliation of trees in April has helped to minimize the aesthetic affects of defoliation. Evaluations will be made throughout 1971 to determine the trend of the caterpillar population.

PEST DETECTION IS FOR YOUR PROTECTION

BE ALERT! Report promptly any new or unusual forest pests to the Regional Forester on form R-3 5200-5 (See FSM 5220).